

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A process for the conversion of a heavy feedstock selected from the group consisting of heavy crude oils, distillation residues, heavy oils coming from catalytic treatment, thermal tars, bitumens from oil sands, coals and high-boiling feedstocks of a hydrocarbon origin known as black oils, including the combined three process units: hydroconversion with catalysts in slurry phase, distillation or flash, and deasphalting, said method comprising:

- mixing at least part of the heavy feedstock and/or at least most of a stream containing asphaltenes obtained from a deasphalting unit with a suitable hydrogenation catalyst to form a first mixture and sending the first mixture to a hydrotreatment reactor into which hydrogen or a mixture of hydrogen and H₂S is charged to form a hydrotreatment reaction product;
- sending a stream containing the hydrotreatment reaction product and the catalyst in dispersed phase to one or more distillation or flash units whereby one or more different fractions coming from the hydrotreatment reaction product are separated and a distillation residue or liquid comprising the catalyst in dispersed phase and which is rich in metal sulfides produced by demetallation of the feedstock is formed;
- recycling at least part of the distillation residue or liquid, [[,]] to a deasphalting zone in the presence of solvents, optionally also fed with at least a fraction of the heavy feedstock, to form a second stream and a third stream, wherein the second stream comprises deasphalting oil and the third stream comprises other asphaltenes, wherein the stream containing the hydrotreatment reaction product and the catalyst in dispersed phase, before being sent to one or more distillation or flash units, is subjected to a high pressure separation pre-step in order

to obtain a light fraction and a heavy fraction, the heavy fraction alone being sent to said distillation unit; and

wherein the light fraction obtained by the high pressure separation pre-step is sent to a secondary hydrogenation post-treatment section, to produce a lighter fraction containing C₁-C₄ gas and H₂S and a heavier fraction containing hydrotreated naphtha and gas oil.

Claim 2 (Canceled).

Claim 3 (Currently Amended): The process according to claim [[2]] 1, wherein the hydrogenation post-treatment reaction is effected at a pressure ranging from 7 to 14 MPa.

Claim 4 (Previously Presented): The process according to claim 1, wherein all the heavy feedstock is mixed with a suitable hydrogenation catalyst and sent to the hydrotreatment reactor, whereas at least 60% of the stream containing asphaltenes, which also contains catalyst in dispersed phase and is enriched with metals coming from the initial feedstock, is recycled to the hydrotreatment zone.

Claim 5 (Original): The process according to claim 4, wherein at least 80% of the stream containing asphaltenes is recycled to the hydrotreatment zone.

Claim 6 (Previously Presented): The process according to claim 1, wherein part of the heavy feedstock and at least most of the stream containing asphaltenes, which also contains catalyst in dispersed phase, are mixed with a suitable hydrogenation catalyst and sent to the hydrotreatment reactor, whereas the remaining part of the heavy feedstock is sent to the deasphalting zone.

Claim 7 (Previously Presented): The process according to claim 1, wherein at least most of the third stream containing asphaltenes, which essentially consists of said asphaltenes, is mixed with a suitable hydrogenation catalyst and sent to the hydrotreatment reactor, whereas all the heavy feedstock is fed to the deasphalting zone.

Claim 8 (Previously Presented): The process according to claim 1, wherein part of the distillation residue or liquid leaving the flash unit is recycled to the deasphalting zone and at least part of the remaining part of said distillation or flash residue is sent to the hydrotreatment reactor.

Claim 9 (Previously Presented): The process according to claim 8, wherein at least part of the distillation or flash residue is sent to the hydrotreatment reactor together with at least part of the stream containing asphaltenes coming from the deasphalting zone.

Claim 10 (Original): The process according to claim 1, wherein at least 80% by weight of the distillation residue is recycled to the deasphalting zone.

Claim 11 (Original): The process according to claim 10, wherein at least 95% by weight of the distillation residue is recycled to the deasphalting zone.

Claim 12 (Previously Presented): The process according to claim 1, wherein at least part of the remaining quantity of distillation residue, not recycled to the deasphalting zone is recycled to the hydrotreatment section.

Claim 13 (Previously Presented): The process according to claim 1, wherein the distillation unit is operated at a reduced pressure ranging from 0.0001 to 0.5 MPa.

Claim 14 (Previously Presented): The process according to claim 13, wherein the distillation unit is operated at a reduced pressure ranging from 0.001 to 0.3 MPa.

Claim 15 (Previously Presented): The process according to claim 1, wherein the hydrotreatment unit is operated at a temperature ranging from 370 to 480°C and at a pressure ranging from 3 to 30 MPa.

Claim 16 (Previously Presented): The process according to claim 15, wherein the hydrotreatment unit is operated at a temperature ranging from 380 to 440°C and at a pressure ranging from 10 to 20 MPa.

Claim 17 (Previously Presented): The process according to claim 1, wherein the deasphalting unit is operated at temperature ranging from 40 to 200°C and at a pressure ranging from 0.1 to 7 MPa.

Claim 18 (Original): The process according to claim 1, wherein the deasphalting solvent is a light paraffin with from 3 to 7 carbon atoms.

Claim 19 (Previously Presented): The process according to claim 1, wherein the deasphalting unit is operated under subcritical or supercritical conditions with one or more steps.

Claim 20 (Previously Presented): The process according to claim 1, wherein the second stream comprising deasphalting oil is fractionated by means of conventional distillation.

Claim 21 (Previously Presented): The process according to claim 1, wherein the second stream comprising deasphalting oil is mixed with the products separated in the distillation step after being condensed.

Claim 22 (Original): The process according to claim 1, wherein the hydrogenation catalyst is a decomposable precursor or a preformed compound based on one or more transition metals.

Claim 23 (Original): The process according to claim 22, wherein the transition metal is molybdenum.

Claim 24 (Original): The process according to claim 1, wherein the concentration of the catalyst in the hydroconversion reactor, defined on the basis of the concentration of the metal or metals present, ranges from 300 to 20000 ppm.

Claim 25 (Original): The process according to claim 24, wherein the concentration of the catalyst in the hydroconversion reactor ranges from 1000 to 10000 ppm.

Claim 26 (Previously Presented): The process according to claim 1, wherein a fraction of the third stream containing asphaltenes, coming from the deasphalting zone, called flushing stream, is sent to a treatment section with a suitable solvent for the separation of the

product into a solid fraction and a liquid fraction from which said solvent can be subsequently separated.

Claim 27 (Previously Presented): The process according to claim 26, wherein the flushing stream is in a quantity ranging from 0.5 to 10% by volume with respect to the feedstock.

Claim 28 (Original): The process according to claim 26, wherein at least part of the liquid fraction deriving from the treatment section of the flushing is sent as such or after being separated from the solvent and/or after the addition of a suitable fluxing liquid to the Fuel Oil fraction.

Claim 29 (Previously Presented): The process according to claim 28, wherein at least part of the liquid fraction deriving from the treatment section of the flushing is recycled to the hydrotreatment reactor.

Claim 30 (Original): The process according to claim 26, wherein the solvent used in the treatment section of the flushing is an aromatic solvent or a mixture of gas oils produced in the process itself or available in refineries.

Claim 31 (Original): The process according to claim 30, wherein the aromatic solvent is toluene and/or xylene blends.

Claim 32 (Original): The process according to claim 26, wherein the volumetric ratio solvent/flushing stream varies from 1 to 10.

Claim 33 (Original): The process according to claim 32, wherein the volumetric ratio solvent/ flushing stream varies from 1 to 5.

Claim 34 (Original): The process according to claim 33, wherein the volumetric ratio solvent/flushing stream varies from 1.5 to 3.5.

Claim 35 (Previously Presented): The process according to claim 26, wherein the hydrogenation catalyst is a decomposable precursor or a preformed compound based on one or more transition metals and the solid fraction of the solid treated is sent to a further selective recovery treatment of the transition metal(s) contained in the hydrogenation catalyst.

Claim 36 (Previously Presented): The process according to claim 35, wherein the transition metal(s) recovered, is recycled to the hydrotreatment reactor.

Claim 37 (Previously Presented): The process according to claim 35, wherein the second stream consists of deasphaltated oil.

Claim 38 (Previously Presented): The process according to claim 1, wherein the first mixture is sent directly to the hydrotreatment reactor.

Claim 39 (Canceled).

Claim 40 (New): The process according to claim 1, wherein the high pressure separation pre-step forms only the lighter fraction and the heavier fraction, and the distillation forms only the distillation residue or liquid comprising the catalyst and one overhead fraction.

Claim 41 (New): The process according to claim 1, wherein the high pressure separation pre-step forms only the lighter fraction and the heavier fraction, and the entire amount of the lighter fraction is hydrotreated in the secondary hydrogenation post-treatment section.

Claim 42 (New): The process according to claim 1, wherein the high pressure separation pre-step is carried out at a pressure of from 3-14 MPa.